



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q386121

Munehisa FUJITA, et al.

Appln. No.: 08/915,683

Group Art Unit: 1752

Confirmation No.: 1847

Examiner: WALKER, Amanda C.

Filed: August 21, 1997

RECEIVED  
APR 28 2003  
TC 1700

For: DIRECT POSITIVE PHOTOGRAPHIC SILVER HALIDE EMULSION AND  
COLOR PHOTOGRAPHIC LIGHT-SENSITIVE MATERIAL COMPRISING SAME.

THIRD SUPPLEMENTAL DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents  
Washington, D.C. 20231

Sir:

I, Takefumi HARA, do hereby declare and state as follows:

I am the same declarant who performed the experimentation described in the  
Supplemental Declaration Under 37 C.F.R. § 1.132 dated September 2, 2002 and filed on  
September 18, 2002, and the Second Supplemental Declaration Under 37 C.F.R. § 1.132 dated  
February 28, 2003 and filed on March 4, 2003. My personal history remains as stated in my  
prior Declaration.

This Third Supplemental Declaration provides further explanation of the test results  
contained in my prior Supplemental Declaration.

(1) In preparation of the samples of AgBr grains and those of AgBrI grains in my prior  
Supplemental Declaration under 37 C.F.R. § 1.132, the amounts of Compound A (3,6-dithia-1,8-  
octadiol) were varied for the following reasons.

The conditions for forming the emulsion grains for adjusting the "coefficient of variation of grain thickness" to be compared vary due to differences in the halogen compositions of AgBr grains and AgBrI grains.

Compound A is a parameter adjusting the grain shape of the emulsion and the "coefficient of variation of grain thickness." The amount of Compound A does not have any specific meaning in the present invention. Rather, the critical value to be compared in the present invention is the claimed "coefficient of variation of grain thickness." Accordingly, when samples of the above AgBr grains and samples of the above AgBrI grains were compared, the pBr value and the addition amount of Compound A were changed to prepare emulsions so that emulsions having the same dimensions and "coefficient of variation of grain thickness" could be compared.

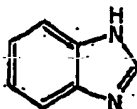
In other words, with respect to AgBr grains and AgBrI grains, in order to prepare emulsion grains with substantially the same "coefficient of variation of grain thickness" so as to allow for comparison of the same, the pBr value and the addition amount of Compound A must be changed. Accordingly, the addition amount of Compound A is varied in the samples to be compared in the experiment.

(2) The effect of the present invention originates from the factor of "the coefficient of variation of grain thickness" but not from the direct effect of Compound A. This is explained as follows.

Compound A is a silver halide solvent, and contains a sulfur atom in its molecule. However, Compound A does not function as a sulfur sensitizing agent. In order to demonstrate this fact, I conducted the following additional experiments.

Specifically, a comparative experiment was conducted using samples prepared by adding, as the silver halide solvent, Compound B containing no sulfur atom, instead of Compound A.

Compound B



Experimentation

Preparation of Emulsions 25 to 28

Emulsions 25 to 28 were prepared by the same procedure as Emulsions 13 to 16 in my prior Supplemental Declaration Under 37 C.F.R. § 1.132, except for adding Compound B shown above instead of Compound A in the amount shown in Table 1 below. The a value, the b value and the coefficient of variation of grain thickness of the resulting emulsions are also shown in Table 1 below.

Table 1

Emulsion No.	Silver halide composition	Amount of Compound B added (g)	pBr	Compound No.	a (μm)	b (μm)	Coefficient of variation in grain thickness
25	AgBr	0.03	2.7	1-16	0.72	0.08	16%
26	AgBr	0.30	2.4	1-16	0.72	0.08	29%
27	AgBr	0.41	2.2	1-16	0.72	0.08	35%
28	AgBr	0.50	1.8	1-16	0.72	0.08	43%

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Preparation of Samples 25 to 28

Samples 25 to 28 were prepared by the same procedure as Samples 13 to 16 in my prior Supplemental Declaration Under 37 C.F.R. § 1.132, except for changing Emulsions 13 to 16 to Emulsions 25 to 28, respectively. See Table 2.

Table 2

Sample No.	Emulsion incorporated in 8th layer	Emulsion incorporated in 15th layer	Emulsion incorporated in 22nd layer
25	Emulsion 25	Emulsion 25	Emulsion 25
26	Emulsion 26	Emulsion 26	Emulsion 26
27	Emulsion 27	Emulsion 27	Emulsion 27
28	Emulsion 28	Emulsion 28	Emulsion 28

The above Samples 25 to 28 were evaluated in the same manner as described in my prior Supplemental Declaration Under 37 C.F.R. § 1.132, and the results are shown in Table 3.

Table 3

Sample No.	D <sub>800</sub>			D <sub>min</sub>			Middle sensitivity			Negative sensitivity		
	Y	M	C	Y	M	C	Y	M	C	Y	M	C
25	2.17	2.31	2.47	0.15	0.16	0.24	110	126	147	83	83	83
26	2.13	2.27	2.43	0.17	0.18	0.26	108	124	146	86	88	88
27	2.10	2.24	2.40	0.19	0.21	0.29	105	120	141	92	94	95
28	2.04	2.19	2.33	0.23	0.24	0.33	101	118	137	100	103	105

It is clear from the above results and the comparisons with the results of Emulsions 13 to 16, that even when Compound B which contains no sulfur atom was used instead of Compound A, substantially the same results (similar tendency) was obtained. That is, Sample Nos. 25 and

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26 of the present invention were higher in  $D_{max}$  and middle sensitivity, but remarkably lower in  $D_{min}$  and Negative sensitivity than Comparative Sample Nos. 27 and 28.

The above experimentation concretely demonstrates that the unexpected results of the present invention are obtained independent of the presence of sulfur atom in the silver halide solvent, and further, that control of coefficient of variation of grain thickness is critical to achieving the effects of the present invention.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: April 21, 2003

Takefumi Hara  
Takefumi HARA